

**Work Order ID 64021**

Tuesday, November 23, 2010 8:04:52 AM

Page 1

Item ID: D3953-17

Accept

Revision ID:

Item Name: Gas Spring Spacer

Start Date: 11/23/2010 Start Qty: 10.00

Required Date: 11/30/2010 Req'd Qty: 10.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D3953

C

100

0.00



Waterjet

FLOW CNC Waterjet

Memo

0.00

1-Cut as per Dwg D3953

Dwg Rev: EProg Rev: C

2-Drill holes as per dwg

3-Deburr if necessary

HB 10-11-23

(15)

110

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Quality Control

Memo

0.00

HB 10-11-23

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_






NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			



**NOTE:** Date & initial all entries







# Work Order ID 64021

Tuesday, November 23, 2010 8:04:52 AM

Page 2

Item ID:	D3953-17	Accept		Setup	Start	
Revision ID:						
Item Name:	Gas Spring Spacer				Stop	
Start Date:	11/23/2010	Start Qty:	10.00		Cust Item ID:	
Required Date:	11/30/2010	Req'd Qty:	10.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120  QC Quality Control	QC8- Inspect parts - second check  Memo	0.00 0.00							<i>S 10/11/23</i> 
130  Small Fab Small Fab	Memo 1- OPEN HOLES AS PER DWG 2- DEBURR IF NECESSARY	0.00 0.00							<i>1810-11-23</i> <i>E/S 10/11/24</i> 
140  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00 0.00							

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 64021

Tuesday, November 23, 2010 8:04:52 AM

Page 3

Item ID: D3953-17

Accept

Revision ID:

Item Name: Gas Spring Spacer

Start Date: 11/23/2010 Start Qty: 10.00

Required Date: 11/30/2010 Req'd Qty: 10.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

150



Packaging

Packaging

Identify as per dwg & Stock Location: 121

Memo

0.00

0.00

160



QC

Quality Control

QC21- Final Inspection - Work Order Release

Memo

0.00

0.00

*Signature*

10/11/25

MR

10-11-24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, November 23, 2010 8:04:56 AM

Page 1

Work Order ID: 64021

Parent Item: D3953-17

Parent Item Name: Gas Spring Spacer



Start Date: 11/23/2010

Required Date: 11/30/2010

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP RevA: New issue DD verified by:EC  
revC DD 10.03.02 verified by:EC

IPP Rev:B as per dwg

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

M304B0.375X03.000

Purchased

No

100

f

10.3000

0.03125

0.328947

1.



210-11-23

M304 SS bar .375 x 3.00

Location

Loc Qty

Loc Code

MAT53

10.3

115389

10.3

115384

15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

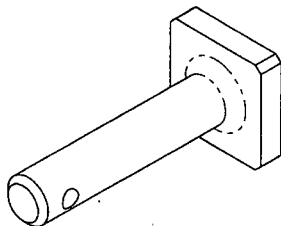




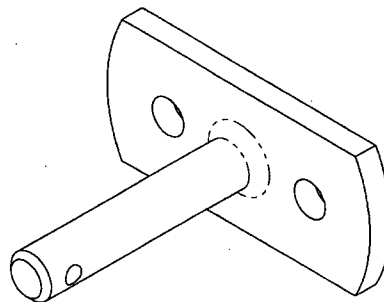
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ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 644021  
2810-11-23



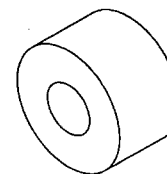
**D3953-1 GAS SPRING BRACKET**  
(FULL LID)



**D3953-3 GAS SPRING STUD, LID**



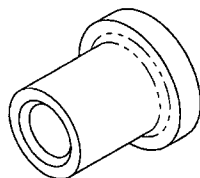
**D3953-5 GAS SPRING STUD, BASE**



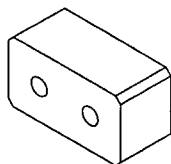
**D3953-7 GAS SPRING SPACER**



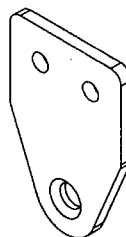
**D3953-9 GAS SPRING WASHER**



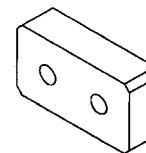
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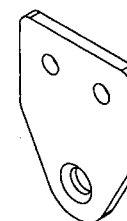
**D3953-13 GAS SPRING SPACER**  
(FULL LID)



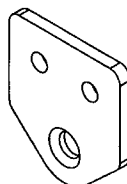
**D3953-15 GAS SPRING BRACKET**  
(SPLIT LID)



**D3953-17 GAS SPRING SPACER**  
(SPLIT LID)



**D3953-19 GAS SPRING BRACKET**  
(SQUARE BASKET)



**D3953-21 GAS SPRING BRACKET**  
(SQUARE BASKET)

RELEASED  
2010-02-26

C	PARTS -19 & -21 ADDED (SHT 18 & 4). CSK CALLOUT WAS CHAM (C6-2, B6-3, C6-4). G SYMM WAS G SYM ABOUT (C7-2, C7-4). SECTION C-C REPOSITIONED TO B24 REASON: ADDL PARTS REQ'D; DRAFTING ERRORS	JPH	10.01.29
B	SHEET 3 ZONE C1, DIM 0.05 MIN WAS 0.13. MULTIPLE DIMENSIONS MIN/MAX REMOVED TOLERANCE ADDED. REASON: DIFFICULTY INSTALLING COTTER PIN AT NEXT ASSY.	AJS	09.11.11
A	NEW ISSUE	AJS	09.07.27
REV.	DESCRIPTION	BY	DATE
DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	JPH		
CHECKED	<u>97</u>	DRAWING NO.	REV. C
MFG. APPR.	<u>97</u>	D3953	SHEET 1 OF 4
APPROVED	<u>97</u>	TITLE	SCALE
DE APPR.	<u>97</u>	GAS SPRING LID COMPONENTS	NTS
DATE	10.01.29	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. NO REUSE OR DISSEMINATION TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

**Dart Aerospace Ltd**

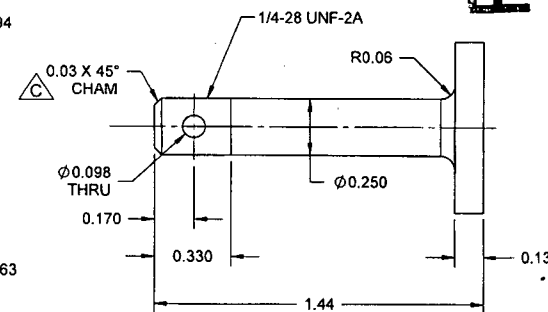
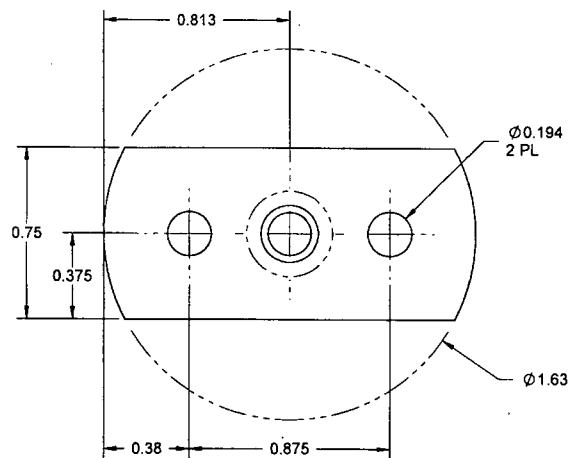
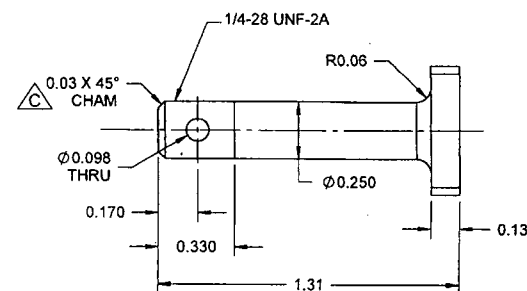
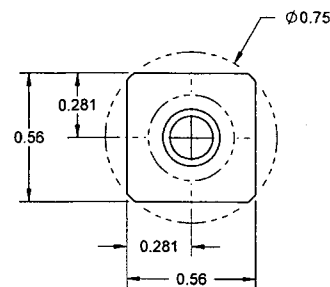
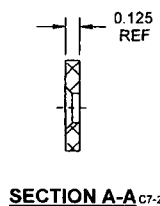
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



1) MATERIAL -1: 304/316 STAINLESS STEEL SHEET ANNEALED 2B FINISH,  
PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240  
REF DART SPEC M304S11GA

-3 & -5: AISI 304 STAINLESS STEEL BAR  
REF DART SPEC M304B  
OR:  
AIS1 304/316 STAINLESS STEEL ROD  
REF DART SPEC M304R

2) FINISH: N/A  
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
4) UNITS: INCHES UNLESS OTHERWISE NOTED  
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX  
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3953-X" USING FINE POINT PERMANENT INK MARKER  
7) WEIGHT -1: 0.11 lbs  
          -3: 0.03 lbs  
          -5: 0.06 lbs

**D3953-3 GAS SPRING STUD, LID**

**D3953-5 GAS SPRING STUD, BASE**

DESIGN	AJS	<b>DART AEROSPACE LTD</b>	
DRAWN	JPH	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>[Signature]</i>	D3953	SHEET 2 OF 4
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	GAS SPRING LID COMPONENTS	
DATE 10.01.29		NTS	

RELEASED  
2010-02-26

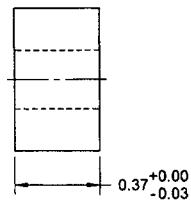
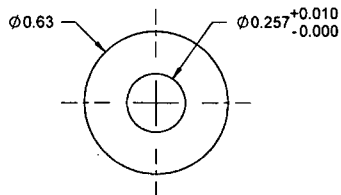
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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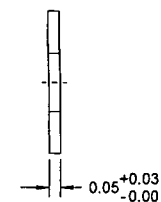
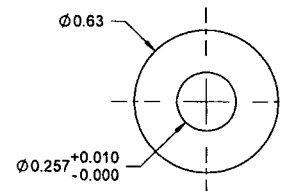
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

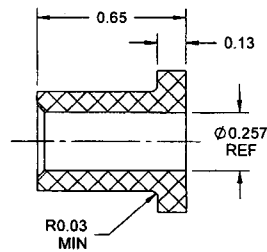
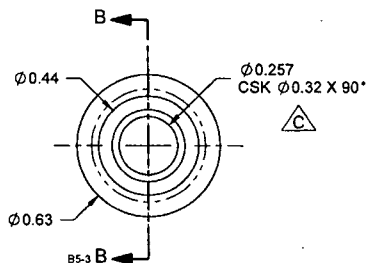


**D3953-7 GAS SPRING SPACER**



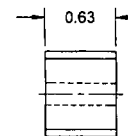
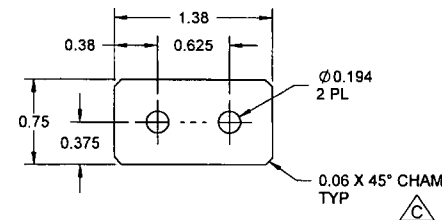
**D3953-9 GAS SPRING WASHER**

*u/c 4400  
44021*



**D3953-11 GAS SPRING SPACER**

**SECTION B-B B7-3**



**D3953-13 GAS SPRING SPACER**

**NOTES:**

1) MATERIAL -7, -9 & -11: DELRIN II 150E OR ACETRON GP ACETAL, BLACK  
REF DART SPEC M-DELRIN-R

-13: AISI 304 STAINLESS STEEL BAR  
REF DART SPEC M304B

- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION -13 ONLY: IDENTIFY WITH DART P/N "D3953-13" USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT -7/-9/-11: < 0.01 lbs EACH  
-13: 0.17 lbs

**RELEASED**  
2010-02-26

DESIGN	AJS	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	JPH		
CHECKED	<i>[Signature]</i>	DRAWING NO. <b>D3953</b>	REV: C
MFG. APPR.	<i>[Signature]</i>	SHEET 3 OF 4	
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	<b>GAS SPRING LID COMPONENTS</b>	NTS
DATE	10.01.29	COPYRIGHT © 2009 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

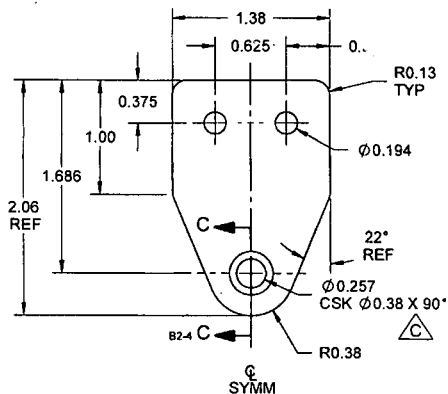
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

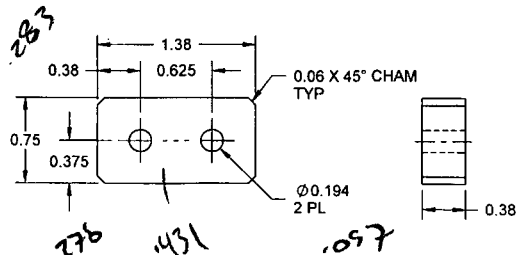
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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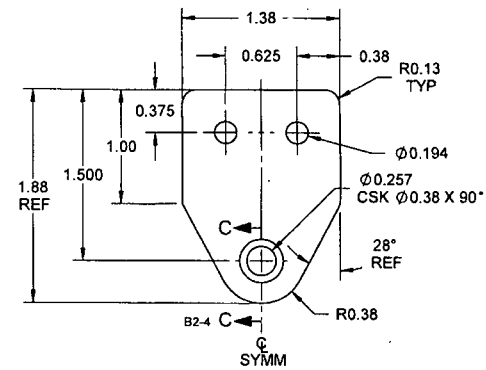
**NOTE:** Date & initial all entries



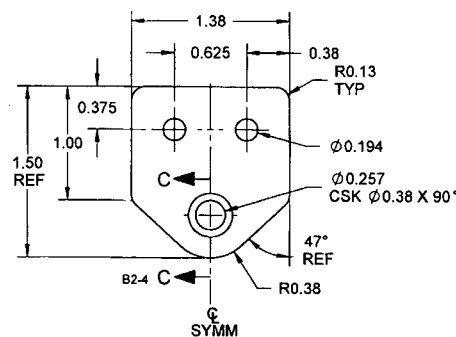
**D3953-15 GAS SPRING BRACKET**  
(SPLIT LID)



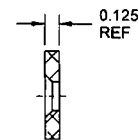
**D3953-17 GAS SPRING SPACER**  
(SPLIT LID)



**D3953-19 GAS SPRING BRACKET**  
(SQUARE BASKET)



**D3953-21 GAS SPRING BRACKET**  
(SQUARE BASKET)



**SECTION C-C**

**NOTES:**  
1) MATERIAL -15/-19/-21: 304/316 STAINLESS STEEL SHEET-ANNEALED 2B FINISH,  
PER MIL-S-5059 OR AMS 5513/5524 OR ASTM A240 OR ASME SA240  
REF DART SPEC M304S11GA

-17: AISI 304 STAINLESS STEEL BAR  
REF DART SPEC M304B

- 2) FINISH: N/A  
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED  
4) UNITS: INCHES UNLESS OTHERWISE NOTED  
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX  
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3953-X" USING FINE POINT PERMANENT INK MARKER  
7) WEIGHT -15: 0.08 lbs  
-17: 0.10 lbs  
-19: 0.07 lbs  
-21: 0.06 lbs

**RELEASED**  
2010-02-26

DESIGN	AJS	<b>DART AEROSPACE LTD</b>	
DRAWN	JPH	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>Q</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>E</i>	<b>D3953</b>	SHEET 4 OF 4
APPROVED	<i>H</i>	TITLE	SCALE
DE APPR.	<i>H</i>	<b>GAS SPRING LID COMPONENTS</b>	NTS
DATE	10.01.29	COPYRIGHT © 2009 BY DART AEROSPACE LTD	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries